hyde.—A rotating contact breaker, and some arrangements for producing powerful high frequency currents, by M. d'Arsonval. A description of the apparatus used in the decoration of the front of the electricity section at the Paris Exhibition. The condenser was of a special type, micanite plate immersed in petroleum being used; glass, ebonite, celluloid and paraffined paper were all found to be rapidly destroyed by the currents in use. A new device for breaking the circuit by blowing out an arc is also described.—On the *Stigmaria*, by M. Grand'Eury. The observations of the author are opposed to the view that the *Stigmaria* are the roots of *Sigillaria*, a study of over one hundred specimens showing distinct differences between the two kinds of roots. The true *Stigmaria*, although frequently found together with the roots of *Sigillaria*, appear to have lived generally in much deeper waters.—Influence of periodic perturbations of semi-major axis upon the value of the mean motion deduced from the observations of a planet, and on the corresponding correction of the value originally adopted for the semi-major axis, by M. A. Gaillot.—On a simplified formula for calculating astronomical refractions, by M. L. Cruls.—On series of rational fractions, by M. Émile Borel.—On the characteristics of partial differential equations and the principle of Huygens, by M. J. Coulon.—Vortex motions with cellular structure. Optical study of the free surface, by M. Henri Bénard.—The increases of resistance in radio-conductors, by M. Édouard Branly. The usual effect observed in receivers for the Hertzian waves is a decrease of resistance. In certain cases, however, the opposite is the case, and the experimental results for a tube containing lead peroxide are given.—Induction and electrostatic oscillations, by M. P. de Heen.—Remarks on a recent note of M. G. le Bon, by M. P. Curie. The property of losing its luminosity possessed by a radiferous barium chloride, recently made the subject of a communication by M. le Bon, has been previously published by several authors.—A new microchemical reaction of palladium, by MM. M. E. Pozzi-Escot and H. C. Conquet. Potassium nitrite and excess of a caustic alkali give characteristic crystals with a solution of a palladium salt.—Experimental researches on the physiological phenomena accompanying chlorosis in the vine, by M. Georges Curtel. Chlorosis is accompanied in the diseased leaf with a marked decrease in the respiratory activity and diminution of the ratio $CO_2 : O_2$, by a diminution or cessation of assimilation, and by a great decrease in the transpiratory function.—On a Selaginella from the coal-measures of Blanzy, by M. R. Zeiller.—Sub-divisions of the Senonian in Portugal, by M. Paul Choffat.—On the production of calcium carbide, by M. L. K. Böhn.

DIARY OF SOCIETIES.

THURSDAY, APRIL 26.

ROYAL INSTITUTION, at 3.—A Century of Chemistry in the Royal Institution: Prof. J. Dewar, F.R.S.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—The Electric Transmission of Power: Prof. George Forbes, F.R.S.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—Road Locomotion: Prof. Hele-Shaw, F.R.S.

FRIDAY, APRIL 27.

ROYAL INSTITUTION, at 9.—Nineteenth Century Clouds over the Dynamical Theory of Heat and Light: Lord Kelvin, G.C.V.O., F.R.S.

PHYSICAL SOCIETY (Solar Physics Observatory, Exhibition Road, South Kensington), at 8.—A short account of the Physical Problems now being investigated at the Solar Physics Observatory, and their Astronomical Applications: Sir Norman Lockyer, K.C.B., F.R.S.—Weather permitting, the 36-inch, 10-inch, and 9-inch telescopes will be used for the observation and photography of celestial objects and their spectra. The Appa-Spottiswoode coil and 21-ft. Rowland grating will also be in operation.

SATURDAY, APRIL 28.

ROYAL INSTITUTION, at 3.—Egypt in the Middle Ages: Prof. Stanley Lane-Poole.

MONDAY, APRIL 30.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Through Africa from the Cape to Cairo: Ewart S. Grogan.

INSTITUTE OF ACTUARIES, at 5.30.—Census-Taking: Dr. Reginald Dudfield.

TUESDAY, MAY 1.

ROYAL INSTITUTION, at 3.—Studies in British Geography: Dr. H. R. Mill.

WEDNESDAY, MAY 2.

ENTOMOLOGICAL SOCIETY, at 8.

SOCIETY OF PUBLIC ANALYSTS, at 8.

THURSDAY, MAY 3.

ROYAL INSTITUTION, at 3.—A Century of Chemistry at the Royal Institution: Prof. J. Dewar, F.R.S.

LINNEAN SOCIETY, at 8.—Note on the Movements in Fishes: Prof. R. J. Anderson.—On New Species of *Halimeda*, from Funafuti: Miss E. S. Barton.—On West Indian Fungi: Miss A. L. Smith.

CHEMICAL SOCIETY, at 8.—Brazilin, Part IV.: A. W. Gilbody, W. H. Perkin, jun., and J. Yates.—Hæmatoxylin, Part V.: W. H. Perkin, jun., and J. Yates.—The Substituted Nitrogen Chlorides and Bromides derived from *o*- and *p*-acet-toluide and their Relation to the Substitution of Halogens in Toluides and Toluidines: F. D. Chattaway and K. R. P. Orton.

RÖNTGEN SOCIETY, at 8.—Demonstration and Exhibition of New Methods and Results.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—If the discussion on Prof. Forbes's Paper, read on April 26, is concluded, the following Paper will be read:—The Calculations of Distributing Systems of Electric Traction under British Conditions: H. M. Sayers.

FRIDAY, MAY 4.

ROYAL INSTITUTION, at 9.—Pottery and Plumbism: Prof. T. E. Thorpe, F.R.S.

COLD STORAGE AND ICE ASSOCIATION (Examination Hall, Victoria Embankment), at 11.30.—Recent Researches in Refrigeration: G. Halliday.—Insulation and Insulators: W. D. A. Bost.——At 3.—Electric Lighting of Cold Stores: W. B. Esson.—The Design and Construction of Buildings for Ice Factories and Cold Storage: P. Gaskell.

SATURDAY, MAY 5.

ROYAL INSTITUTION, at 3.—Egypt in the Middle Ages: Prof. Stanley Lane-Poole.

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